vehicles (defined as vehicles whose original route was effected by a work zone or incident) and a tool to calculate link based measures of effectiveness.

Even with these enhancements, two key weaknesses remain. First, in the absence of any specifically defined traveler information source, none of the simulated DYNASMART-P drivers will deviate from their original route even in the presence of extreme congestion. This behavior is unrealistic, because drivers will make re-routing decision based on visual clues. Second, while DYNASMART-P models queue propagation and any resulting spillback blockage, the simulation logic grows all queues at jam density. Therefore, queues grow more slowly in the DYNASMART-P simulation and are not as long as they would be in real life under similar conditions.

### 9.2.1.2 FREEVAL

The FREEVAL tool also provided reasonable case study results. As mentioned above, vehicle flow diversion from the base case routing must be estimated outside of FREEVAL and the freeway mainline and ramp flows must be adjusted accordingly.

### 9.2.1.3 Tool Comparison

Initially there were some significant discrepancies between the DYNASMART-P results and the FREEVAL results for some of the scenarios. However, the primary reason for the differences flowed directly from the decision to test each tool as realistically as possible relative to how they would be used independently to analyze the selected network. This resulted in completely different demand estimates. The DYNASMART-P demand levels were based on the OD demands taken from the Triangle regional travel demand model. FREEVAL on the other hand was run using demand flow derived from reported AADT values with a directional split derived from a single permanent count station.